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## Backgrounds and decoherence due to energy accumulation and releases in materials

*Tuesday, 7 November 2023 19:40 (20 minutes)*

The hypothesis of energy accumulation and release in materials allow an explanation for excess background events and noise spectra in different detectors and provides a general framework to analyze and deal with such phenomena: one needs to look at what states or defect can carry excess energy, how they can be produced in materials, how they interact, and how their production or interaction can be suppressed, or how these states can be quenched. We discuss the application of this approach to superconducting devices, with an emphasis on the backgrounds and noise at the smallest size and energy scale in superconducting nanowire single-photon detectors and superconducting qubits, and make predictions for new phenomenology to be present.

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### Early Career

No

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